

IN THE CLAIMS:

1. (Currently Amended) An optical deflector comprising:

a mirror structure having a first surface and a second surface which are in a front/back relation, the mirror structure comprising a pair of supports, a movable plate which is moved with respect to the supports, and a pair of elastic members for connecting the movable plate and the supports, such that the movable plate is able to rock with respect to the supports about the pair of elastic members as a rocking axis, the supports having a first surface and a second surface, which respectively comprise a part of the first surface and a part of the second surface of the mirror structure, the movable plate having a first surface and a second surface, which respectively comprise a part of the first surface and a part of the second surface of the mirror structure, and the movable plate having a mirror surface on the second surface;

a single plate base for holding the mirror structure, the mirror structure and the base being individual elements, the base having an opening for exposing the mirror surface, the base having bonding portions projecting from the base, the bonding portions being located on each of two opposing sides of the opening, and the supports of the mirror structure being fixed to the bonding portions of the base by adhesion with the second surfaces of the supports in contact with the bonding portions, so that the mirror structure is positioned remote from the base; and

driving means for driving the mirror structure, the driving means including a conductive element formed on the first surface of the movable plate and a magnetic circuit, ~~magnetic field generating elements fixed on the base and a yoke of magnetic material, which cooperates with the magnetic field generating elements to constitute a magnetic circuit~~ the

magnetic circuit comprising a pair of magnetic field generating elements and a yoke of magnetic material connecting the magnetic field generating elements, the magnetic field generating elements magnetic circuit being mounted only on the same side of the base on which the mirror structure is mounted, the mirror structure being fixed to the bonding portions so as to be offset from the base and the conductive element being positioned so as to overlap the magnetic field generating elements as viewed from a direction parallel to the first and second surface surfaces of the mirror structure, and at least a part of the yoke is disposed in the vicinity of the first surface of the movable plate.

2. (Original) The optical deflector according to claim 1, wherein the supports include electrode pads electrically connected to the conductive element, the base includes wiring materials for electric connection to the outside, the wiring materials have connection portions electrically connected to the electrode pads, and the electrode pads are electrically connected to the connection portions by wire bonding.

3. (Original) The optical deflector according to claim 2, wherein the base comprises a main substrate having the opening, and a rigid substrate fixed to the main substrate, and the wiring materials are formed on the rigid substrate.

4. (Original) The optical deflector according to claim 3, wherein the rigid substrate is within the main substrate.

5. (Original) The optical deflector according to claim 3, wherein the main substrate has conductivity, the wiring materials include a ground wiring for grounding, and the ground wiring is electrically connected to the main substrate.

6. (Original) The optical deflector according to claim 3, wherein the base further comprises a flexible substrate formed integrally with the rigid substrate.

7. (Original) The optical deflector according to claim 3, wherein the base further comprises a flexible lead wire connected to the wiring materials of the rigid substrate.

8. (Original) The optical deflector according to claim 1, wherein the conductive element comprises a coil disposed along a peripheral edge of the movable plate.

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Previously Presented) The optical deflector according to claim 1, wherein the opening of the base has a size that does not intercept a light beam incident upon the mirror surface of a time when the movable plate is parallel to the base at an incidence angle of 45° over a full effective width of the mirror surface, and the magnetic field generating elements are located not to intercept the light beam incident upon the mirror surface of the time when the movable plate is parallel to the base at the incidence angle of 45° over the full effective width of the mirror surface.

14. (Original) The optical deflector according to claim 13, wherein the magnetic field generating elements are located interposing the conductive element formed on the first surface of the movable plate, and a mirror surface effective width w_m , interval w_p of

the magnetic field generating elements, base opening width w_b , height h_p of the magnetic field generating elements with respect to the mirror surface, and height h_b of an upper surface of the base opening with respect to the mirror surface satisfy conditions: $w_p > w_m + 2h_p$; and $w_b > w_m + 2h_b$.

15. (Currently Amended) An optical deflector comprising:

a mirror structure having a first surface and a second surface which are in a front/back relation, the mirror structure comprising a pair of supports, a movable plate which is moved with respect to the supports, and a pair of elastic members for connecting the movable plate and the supports, such that the movable plate is able to rock with respect to the supports about the pair of elastic members as a rocking axis, the supports having a first surface and a second surface, which respectively comprise a part of the first surface and a part of the second surface of the mirror structure, the movable plate having a first surface and a second surface, which respectively comprise a part of the first surface and a part of the second surface of the mirror structure, and the movable plate having a mirror surface on the second surface;

a single plate base for holding the mirror structure, the mirror structure and the base being individual elements, the base having an opening for exposing the mirror surface, the base having bonding portions projecting from the base, the bonding portions being located on each of two opposing sides of the opening, and the supports of the mirror structure being fixed to the bonding portions of the base by adhesion with the second surfaces of the supports in contact with the bonding portions, so that the mirror structure is positioned remote from the base; and

a driver for driving the mirror structure, the driver including a coil formed on the first surface of the movable plate and a magnetic circuit, ~~permanent magnets fixed on the base and a yoke of magnetic material, which cooperates with the permanent magnets to constitute a magnetic circuit~~ the magnetic circuit comprising a pair of permanent magnets and a yoke of magnetic material connecting the permanent magnets, the ~~permanent magnets~~ magnetic circuit being mounted only on the same side of the base on which the mirror structure is mounted, the mirror structure being fixed to the bonding portions so as to be offset from the base, and the coil being positioned so as to overlap the permanent magnets as viewed from a direction parallel to the first and second ~~surface~~ surfaces of the mirror structure, and at least a part of the yoke is disposed in the vicinity of the first surface of the movable plate.

16. (Previously Presented) The optical deflector according to claim 15, wherein the opening of the base has a size that does not intercept a light beam incident upon the mirror surface of a time when the movable plate is parallel to the base at an incidence angle of 45° over a full effective width of the mirror surface, and the permanent magnets are located not to intercept the light beam incident upon the mirror surface of the time when the movable plate is parallel to the base at the incidence angle of 45° over the full effective width of the mirror surface.

17. (Original) The optical deflector according to claim 16, wherein the permanent magnets are located interposing the coil formed on the first surface of the movable plate, and a mirror surface effective width w_m , permanent magnet interval w_p , base opening width w_b , height h_p of the permanent magnet with respect to the mirror surface, and height h_b

of an upper surface of the base opening with respect to the mirror surface satisfy conditions:

$$w_p > w_m + 2h_p; \text{ and } w_b > w_m + 2h_b.$$